

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002065**Date Inspected:** 31-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Hung Wei Qing / Sha Zhi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG / Tower**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Roscoe Dixon was present at the time requested to randomly observe welding and associated operations being performed for the Orthotropic Box Girders (OBG).

**Bay 7 OBG:**

The QA Inspector randomly observed ZPMC Welder Wang Chang Fa, ID 058102 utilizing the Shielded Metal Arc Welding (SMAW) Process with ZPMC Weld Procedure Specification and (WPS) WPS-B-P-2113 3F Repair to fill areas identified by QC Inspector as needing extra weld metal at the junction of stiffeners and flange areas.

The (WPS) WPS-B-T-2112 in the 2F (Horizontal Fillet) position is used to weld the flange to web areas for various floor beam series piece mark FB003-000.

After the completion of fit up and tack welding of stiffeners welders Wu Xian Jian ID 06645 utilized Flux Cored Arc Welding (FCAW) process with ZPMC Weld Procedure Specification (WPS) WPS-B-7-2232-7c-U46-F and welder Hong Shui Li utilizing the (FCAW) process with ZPMC Weld Procedure Specification (WPS) WPS B-T-2133.

The QA Inspector visually verified the electrode filler metal for the SMAW process for tack welding as TL-508 and the filler metal used for the FCAW process to weld the stiffeners was verified by the QA Inspector as Supercored 7H1 with a diameter of 1.4 millimeters.

The QA Inspector observed that during the shift ZPMC CWI, Hung Wei Qing and ZPMC CAWI Inspector Zhen

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Hasfeng were monitoring the electrical parameters, travel speed and temperatures in Bay #7 during the shift. The floor beams randomly observed being welded during this days shift included: FB003-010-004, FB003-010-023, FB003-010-047, FB003-010-044, FB003-010-035, FB003-010-036, FB003-010-048, and FB003-010-032.

The QA Inspector observed that the work being performed was in progress generally appeared to conform to contract specifications.

### Bay 7 OBG:

The QA Inspector randomly observed ZPMC Welder Zhang Qingquan ID 044774 utilizing Flux Cored Arc Welding (FCAW) process with ZPMC Weld Procedure Specification (WPS) WPS 345 FCAW - 2 to repair a total of four areas on OBG floor beam FB007-001 weld # FB007-001-003, CWR# B-CWR 040 2 F Repair.

The filler metal used to complete the repairs was verified by the QA Inspector as Supercored 7H1 with a diameter of 1.4 millimeters.

The QA Inspector observed that the welding performed generally appeared to conform to contract specifications.

### Bay 7 OBG:

The QA Inspector randomly observed ZPMC Welding Operator Sun Gu Zuo ID 058100, utilizing the Submerged Arc Welding (SAW Process with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2221-BL2-C-S-1 to weld fill passes for weld joint FB015-006-026, FB009-006-026, and FB015-007-026.

The QA Inspector visually verified a single electrode was being utilized for the filler passes, the filler metal was JW3 with a diameter of 4.8 millimeters. The QA Inspector observed and noted that during the welding operation the ZPMC welding operator would before welding over previous deposited weld pass utilized the proper cleaning method to remove slag prior to resuming the welding operation.

The QA Inspector observed that during the shift ZPMC CWI, Hu Wei Qing and various ZPMC CAWI Inspectors monitoring the electrical parameters, travel speed and temperatures at several welding stations in Bay #7. The QA Inspector observed that the work performed generally appeared to conform to contract specifications.

### Bay 8 Tower:

The QA Inspector randomly observed ZPMC Welding Operators Ma Ying ID 045270, utilizing the Submerged Arc Welding (SAW Process with ZPMC Weld Procedure Specification (WPS) WPS-B-T-3221-BU3-C-S-1 to weld fill passes for 38M Tower P207 SA265(N) weld joint NSD1-SA265-10B.

Welding Operator Xu Peipei ID050323 was also utilizing WPS) WPS-B-T-3221-BU3-C-S-1 to weld fill passes for 38M Tower P559 SA 293 (S) weld joint SSD1-SA 293-1B/2B. The QA Inspector visually verified a single electrode was being utilized for the filler passes, the filler metal was LA-85 with a diameter of 4.8 millimeters.

The Flux was verified as MIL800-HPN1, the base material listed on the (WPS) as HPS 485WT2 Shear Link grade 485. The QA Inspector observed and noted that during the welding operation the ZPMC welding operator would before welding over previous deposited weld pass utilized the proper cleaning method to remove slag prior to resuming the welding operation.

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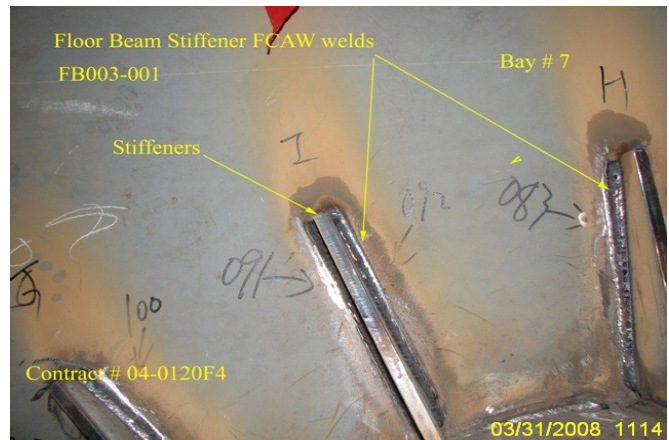
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The QA Inspector observed that during the shift ZPMC CWI, Sha Zhi and various ZPMC CAWI Inspectors monitoring the electrical parameters, travel speed and temperatures at several welding stations in Bay #8

The QA Inspector observed that the work performed generally appeared to conform to contract specifications.

For more detail see photos shown below:



### Summary of Conversations:

As noted within the report shown above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659/ Patric Lowry, who represents the Office of Structural Materials for your project.

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**Inspected By:** Dixon, Roscoe

Quality Assurance Inspector

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**Reviewed By:** Hager,Craig

QA Reviewer